ABSTRACT

Methods for administering mitomycin C to a multi-drug resistant cell and for reducing the toxicity of the compound are described. In the methods, mitoymic C is provided in the form of a prodrug conjugate, where the drug is linked to a hydrophobic moiety, such as a lipid, through a cleavable dithiobenzyl linkage. The dithiobenzyl linkage is susceptible to cleavage by mild thiolysis, resulting in release of mitomycin C in its original form. The linkage is stable under nonreducing conditions. The prodrug conjugate can be incorporated into liposomes for administration *in vivo* and release of mitomycin C in response to endogenous *in vivo* reducing conditions or in response to administration of an exogenous reducing agent.